

SAFE ROADWAYS COMMITTEE

REPORT

Recommendations for Addressing Citywide Traffic Issues, Safety and Quality of Life Concerns In Takoma Park

December 2003

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1. EXECUTIVE SUMMARY

The Safe Roadways Committee was directed by the City Council of Takoma Park to identify the obstinate traffic problems that plague the City, recommend potential solutions, and prepare a report to the City Council.

Over the past year, the Committee has examined numerous traffic studies conducted by and for the City during the past 25 years. While doing this, it learned what issues have been studied, what recommendations have been made and implemented, and what other issues have not been previously addressed. The typical concerns of the reviewed studies include excessive traffic volume on residential streets and the impact of development in neighboring jurisdictions on City traffic volumes. They do not include, however, issues of excessive queuing times at intersections, traffic noise, vibration, and pollution. Additionally, many of the recommended solutions have never been implemented. To prevent future studies from being conducted in this manner, the Safe Roadways Committee recommends that the City adopt the following process improvements:

- establish guidelines and minimum “standard” requirements for future studies, including quantitative quality of life indicators;
- institute more effective decision-making processes about which recommendations to implement and timelines for implementation; and
- actively manage and review the progress in implementing recommendations.

In addition, the Committee identified a number of recommendations that have been made repeatedly. These physical modifications would improve safety for all modes of transportation by reducing vehicle speeds and/or diverting traffic. Roundabouts, pedestrian islands, medians, bulbouts, traffic circles, and road closures (or cul-de-sacs) are just a few examples. The Committee recommends that the City tries out, as soon as practicable, at least three of these techniques. After a trial period and testing, they may have broader application throughout the City. The recommended traffic calming procedures include:

1. **Roundabouts:** Roundabouts are circular barriers that substitute for traffic signals or all-way stop signs at intersections. Roundabouts decrease vehicle speed and reduce conflicts between vehicles, and vehicles and pedestrians. Takoma Junction, the intersection of Piney Branch and Philadelphia Avenue, and Philadelphia Avenue and Maple Avenue are good locations for initiating roundabouts.
2. **Pedestrian Islands:** Pedestrian islands or refuges are raised structures placed between two travel lanes, usually at a pedestrian crosswalk. They slow vehicles within the travel lane and provide a safe area for pedestrians, allowing them to cross the road one half at a time. Locations for installation include: Carroll Avenue at the un-signalized crosswalk in front of Takoma Tower; Carroll, Columbia, and Park Avenues; Flower and Domer Avenues; and Philadelphia Avenue across from the library/municipal center access.
3. **Bulbouts:** Bulbouts are curb extensions that reduce curb-to-curb roadway travel lane widths. The narrower road lane enables pedestrians to cross a wide street in a much shorter time, decreasing the chances of pedestrian-vehicle conflicts. Potential locations to implement this procedure are at the intersections of Carroll and Laurel Avenues, and Carroll and Westmoreland.

The Committee also determined that the City needs to act on recommendations made in the

1993 *City of Takoma Park Transportation Plan: Phase I - Traffic Management Plan* (adopted June 14, 1993). Most importantly:

1. Work to correct the inappropriate designation of residential streets as arterial roads on various State and County plans;
2. Assign one-way designation to those streets that call for only local residential traffic;
3. Cause the establishment of an interagency, cross-jurisdictional traffic safety related quality of life working group to remedy problems caused by having control over City streets divided among several agencies; and
4. Spearhead in the State Legislature appropriate legislation allowing the implementation of automated enforcement of speed limits at designated locations.

As can be seen from the above, the Committee did not recommend that the City prepare a “**get well**” plan at this time. It was felt that it is more important, and in keeping with the Committee’s charter, to put forward recommendations that will benefit the City almost immediately. Among these are the three traffic calming construction recommendations. Once these are evaluated, then the City should adopt a schedule for applying these measures at the appropriate places in the City.

Similarly, the City should adopt and initiate immediately the implementation of the above detailed process improvement recommendations, some of which have been identified as early as 1993.

2. INTRODUCTION AND BACKGROUND

Takoma Park has had problems with pass through traffic for a very long time. They grow worse as the volume of traffic continues to increase on major roads within and surrounding the City. The traffic congestion has a significant negative effect on the health, safety and welfare of residents and other road users, as well as causing damage to adjoining property. City roads were not designed to carry such large volumes of traffic. As a result, the quality of life in the city is increasingly degraded.

Solutions to the traffic-related problems have been slow in coming and often times very difficult to implement because of required coordination among several jurisdictions. It is often difficult to agree upon which jurisdiction is responsible for a certain solution. Residents seeking fixes from a responsible State or County agency are not always directed to the appropriate person(s) and seldom find an office willing to take responsibility for tackling an area-wide problem involving mixed jurisdiction road segments.

This situation is compounded when traffic impact studies are limited in geographic area or do not account for current or emerging developments that involve multiple State and County agencies, as well as other authorities (e.g. PEPCO, METRO), that would impact the volume and movement of traffic within the area.

While local remedies (i.e., a stop sign here, a traffic light there) have been obtained over the years, these usually come after a serious accident (the “blood on the pavement” response) or when concentrated neighborhood effort is brought to bear on a specific local problem.

At the recommendation of the Takoma Park Public Safety Citizens Advisory Committee (PSCAC), the City Council established the “Takoma Park Safe Roadways Committee” on November 25, 2002. The Safe Roadways Committee is specifically charged with identifying and recommending solutions to difficult, long-term and area-wide traffic problems that adversely impact the quality of life in Takoma Park (the resolution establishing the Committee is attached). The goal of the Safe Roadways Committee is similar to that of the 1993 City Transportation Plan. That goal is in part “. . . to mitigate the negative impacts of . . . traffic, thereby enhancing the overall quality of life within the City of Takoma Park.”

To complete this task, the Takoma Park Safe Roadways Committee examined the numerous transportation studies (See list in Appendix A) conducted by and for the City over the past 25 years to learn what has and what has not been studied, what recommendations were made and implemented and which were not implemented. The Committee also distilled from these past studies a number of specific recommendations, some that have been made repeatedly study after study, and which should be implemented as soon as practicable.

Need for a Multi-modal Transportation Focus

Roadway design has generally emphasized moving motorized vehicles safely and quickly; traffic studies have primarily focused on vehicular mobility. In order to enhance the quality of life in Takoma Park, multiple modes of transportation—walking, biking, driving, and mass transit—must be taken into consideration. However, due to the challenge of addressing all modes, this report is not comprehensive—it, too, focuses on motorized vehicles. As recommended in Section 6 of this report, addressing multi-modal transportation issues should be required in future studies and become a focus of a permanent transportation advisory committee.

3. TRANSPORTATION ENVIRONMENT

Although the traffic problems that plague Takoma Park are fairly obvious, there are a number of unique characteristics of Takoma Park that make these problems particularly difficult to solve. We found that the ten-year-old *City of Takoma Park Transportation Plan: Phase I - Traffic Management Plan* (adopted June 14, 1993) was useful in identifying these characteristics and some of the conclusions of that study bear repeating here.

Inappropriate Arterial Designations

First, many of Takoma Park's residents live along residential streets that are designated as arterials on State and County plans. The main function of arterials is to carry large volumes of traffic and several residential streets bear the traffic typical of arterial roads. The arterial designation is inappropriate, however, because these streets are narrow, two-lane roads on which single-family residences directly front. They do not have the required arterial right of ways of 70' or 80' (M-NCPPC, 2000 p.86). It is impossible to achieve this setback or road width, both because Takoma Park has hundreds of buildings in the County historic district that would be in the path of any such arterial expansion and, more importantly, because any such expansion would significantly impact the community character in the heart of the City. Thus, occupants on streets like Piney Branch Road, Carroll, Ethan Allen, Philadelphia, and Flower Avenues are left with residential roads that bear more traffic than they were designed to carry. Because of the arterial designation of these streets, inhabitants are exposed to excessive noise, vibration, and pollution.

Multi-jurisdictional Road Management

Second, jurisdiction of Takoma Park streets is fragmented among several bodies that serve different constituencies, thus reducing the ability of Takoma Park to manage roadway infrastructure in a way that serves its interests versus that of the City's neighbors. For example, the Maryland-National Park and Planning Commission (M-NCPPC) controls Sligo Creek Parkway and the State Highway Administration controls the State roads in Takoma Park, including University Boulevard (MD 193), Carroll Avenue (MD 195), Piney Branch Road (MD 320), Philadelphia and Ethan Allen Avenues (MD 410), New Hampshire Avenue (MD 650), and Flower Avenue (MD 787)

Cut through Commuter Traffic

Third, the over utilization of some roads results in shortcutting particularly during morning and afternoon peak hours. Takoma Park's streets are patterned on a modified grid system that does not isolate local residential traffic on narrow, two-lane streets from through commuter traffic on certain roads. As a result, drivers seeking to avoid congestion on these roads find it easy to enter residential street grids that are even less able to handle this increased flow.

Speed humps have been the traditional reactive strategy to reduce cut through traffic. Although they may be effective, often they divert traffic to other roads without speed humps. Usually, this results in additional requests for speed humps. The 1993 *City Transportation Plan* recognized this by advising other alternatives: "Actively consider alternatives to speed humps, such as pavement markings, one-way street patterns, turn restrictions, reducing the number of moving lanes, adding bicycle lanes, necking down street entrances with 'chokers,' traffic circles, raised intersections, and visual narrowing using landscaping or a combination of these techniques" (p. 16). While the City has instituted turn bans and created some one-way streets, these strategies, along with other traffic calming procedures (recommended in the studies and the 1993 City Transportation Plan) would be more effective solutions than speed humps to this problem.

CELLS AND TRAFFIC MAZES

Cells and traffic mazes are two ways to discourage through traffic. Dividing a city into self-contained cells makes penetration by through traffic difficult. Göteborg, Sweden divided the inner city into five zones that sealed off most traffic wanting to pass from one zone to another. Vehicle flows dropped 50% on some main routes; and while there were corresponding increases of 25% on the ring routes, the traffic moved faster because of simplified flow patterns. Two years later the accidents were found to have been reduced by 10% on ring roads and by 40% inside the cells, with fewer serious collisions. Traffic mazes utilize a series of one-way streets and cul-de-sacs that challenge those vehicle operators not familiar with the area to find an alternative to the main route. Both methods segregate only the unwelcome through traffic. Although a greater burden is placed on the major and ring roads, motorists may be discouraged to find alternative routes or encouraged to switch to other modes of transport (Zuckermann, 1991).

4. PAST STUDIES AND RECOMMENDATIONS

Over the past few decades, numerous traffic studies have been conducted to identify potential or existing traffic and safety problems and provide solutions to address those problems. It was striking to the members of the Committee that so many problems raised in the past continue to this day, and that so many of the recommended solutions have never been implemented. The following paragraphs summarize the major problems that have been identified in past studies and that we believe continue in the City today.

Safety

- Unsafe conditions for pedestrians (e.g., lack of adequate sidewalks and/or buffers from traffic) on many roads and at activity points with many walkers (e.g., near schools, bus stops, parks, etc.); children, handicapped, and elderly residents are particularly affected.
- Speeding cars on all streets.
- Unacceptably high accident rates on busy streets, due in part to poor sight distances at some intersections.

Quality of Life

- Excessive traffic volume on residential streets incorrectly designated as arterials.
- Excessive commuter cut-through traffic on certain other residential streets.
- Planned development in neighboring jurisdictions that will further increase commuter traffic through Takoma Park, particularly on residential streets.
- Commercial and bus traffic which creates noise, vibration, and pollution and degrades the quality of life for residents of those streets where these travel as well as the community as a whole.

Alternative Modes of Transportation

- Lack of marked on-street bicycle routes.
- Inadequate emphasis on environmentally sound alternatives to single-occupancy Automobile travel, such as transit, ride-sharing, bicycling and walking.

We point out the above general problems as areas in which the City should focus attention in coming years. The Committee believes strongly that there are a number of specific steps that can be taken to partially address the problems described above. These steps are largely those recommended repeatedly in past studies, such as the 1993 *City Transportation Plan*, and by Dan Burden during his recent July walkability audit. We think that the following physical engineering actions would have significant and lasting benefits of improving the quality of life of residents of Takoma Park, and should be implemented. We propose including projects that ensure safety and efficient movement for all modes of traffic (auto, bicycle, pedestrian, and transit). If after an initial trial period and evaluation these modifications are found to improve safety and transport, similar remedies should be employed at other locations throughout the City.

Demonstration Projects

With respect to the issue of road safety issues by the City, the Committee recommends that the City implement demonstration projects. These are three highly desirable roadway re-engineering projects, chosen because of their repeated recommendation in past studies. The Committee believes that these projects have significant potential to solve City traffic problems. They should be funded, constructed, and evaluated with the intention of employing similar actions throughout the City.

1. Construct a **Roundabout**. Roundabouts are circular barriers placed in the middle of an intersection that substitute for traffic signals or all-way stop signs. They are safer than conventional intersections because motorists must decrease their speed to navigate the roundabout, and there are fewer potential conflict points between vehicles, and vehicles and pedestrians. Takoma Junction, the intersection of Piney Branch and Philadelphia Avenue, and Philadelphia Avenue and Maple Avenue are good locations for a roundabout.
2. Build a **Pedestrian Island**. Pedestrian Islands or refuges are raised structures placed between two travel lanes, usually at a pedestrian crosswalk. They slow vehicles within the travel lane and provide a safe area for pedestrians, allowing them to cross the road one half at a time. Additionally, they slow left-turn movements and vehicles at intersections due to the narrower travel lane width. Locations for installation include: Carroll Avenue at the unsignaled crosswalk in front of Takoma Tower; Carroll, Columbia, and Park Avenues; Flower and Domer Avenues; and Philadelphia Avenue across from the library/municipal center access.
3. Construct **Bulbouts**. Also known as narrowings, neckdowns, and chokers, bulbouts are curb extensions that reduce curb-to-curb roadway travel lane widths. The narrower road lane enables pedestrians to cross a wide street in a much shorter time, decreasing the chances of pedestrian-vehicle conflicts. Potential locations to implement this procedure are at the intersections of Carroll and Laurel Avenues, and Carroll and Westmoreland.

5. PAST STUDIES AND THEIR LIMITATIONS

Members of the Committee also identified a number of problems with past studies:

- For studies that evaluated level of service provided at intersections, there was rarely any initial determination of what level of service would be deemed unacceptable.
- The studies did not cover a minimum subset of major intersections. This failure compromises the relevance and comparability of the studies.
- Almost all studies neglected the impacts of noise, vibration, and pollution on residents. Nor were there any determinations of what level deterioration of these environmental variables would be acceptable.
- Almost all studies failed to address the impacts of major and minor accidents or to estimate how anticipated changes would affect accident rates.
- Most studies failed to make any assessment of how predicted future traffic volume would affect the roads upon which they were focused.

These problems likely resulted from the fact that the City has no policy specifying the required data content and measures to be included in all transportation studies. More likely, however, M-NCPPC, which has jurisdiction over the review and approval of all development projects in the County, set the specifications for development-related traffic impact studies, and the City did not provide the necessary input to accommodate Takoma Park's requirements.

The failure of past traffic studies to provide the above information was of great concern to this Committee. We believe that it is essential before any additional traffic studies are authorized, that the Council establish minimum data content requirements for all studies to guide and standardize future work. Appendix B provides more information on what content should be "standard" in future traffic studies. If a study is State initiated, Takoma Park should coordinate with the State to ensure that the City's study requirements are included. At a minimum, all future traffic studies should include:

- a standard set of indicators to determine whether and how a project fails to satisfy minimum conditions on any indicator (established by the City).
- Indicators that separate pedestrian, car and truck/bus vehicle counts, intersection queuing, accident rates, and quality of life measures including pedestrian safety, noise, vibration, and pollution.
- an evaluation of current and anticipated conditions at all major intersections relevant to the study.
- an evaluation of current and anticipated levels of cut-through traffic along designated local streets.
- an account for impacts of proposed development outside of Takoma Park.
- an evaluation of residential and commercial parking impacts.

Guiding Objectives

The Council should establish objectives to be addressed in all transportation studies. At a minimum, some recommendations in all future studies should provide guidance that will have impact on vehicles' operating speeds, traffic congestion, cut-through traffic along local streets, non-automotive transportation, safety for all travel modes, and visual aesthetics.

6. INNOVATIVE LEADERSHIP

The Committee recognizes and appreciates recent City transportation efforts. City staff have been working with the State Highway Administration to coordinate planning and implement safety modifications on Carroll Avenue from University Boulevard to Garland Avenue, and the planned streetscape improvements on Carroll Avenue from Philadelphia to Columbia Avenues. The City is striving to accommodate other transportation modes. It recently completed its portion of the Metropolitan Branch Trail; the Council passed a resolution supporting the Bi-County Transitway; and staff participate in a multi-jurisdictional pedestrian safety committee.

With that said, management of the City and State roadways in Takoma Park has unfortunately been typified by reactive efforts in which significant actions to improve road or traffic safety or reduce traffic congestion are only taken after serious accidents or after sustained citizen lobbying. There is little follow-through on reports made to the City or on enhancements that were made to reduce traffic and increase safety. Without such follow-through and evaluation it is impossible to tell whether the study or improvement had any positive affect.

We propose that the City take a proactive role toward managing its roadways. A hallmark of a new proactive approach could be the City's action on some of the specific procedures identified above. We also encourage the City to begin a new process of reporting regularly to the public on Takoma Park's roads and related traffic, safety, and quality of life issues, and on proposed, ongoing, and completed projects. Ideally, this would occur through an annual or biannual report on the state of Takoma Park's roads and would provide information on traffic, accidents, air and noise pollution, and the road improvements made and planned. We believe that such a public strategy, although likely to create additional work for City staff, will create huge benefits in stimulating citizen interest and involvement in traffic and safety issues and that such transparency would catalyze the City to make progress on some of the most important road traffic and safety issues that we face.

We also make the following recommendations that we believe would improve conditions on our roads in Takoma Park:

1. Immediate Good Faith Action

Implement Demonstration Projects

Work with the State Highway Administration to implement the above identified demonstration projects. This will affirm that Council is committed to solving the City's transportation problems.

2. Short-term Process Change

Make Traffic Management a Priority

Establish traffic management as a mission of the Department of Economic and Community Development. The department would also be responsible for maintaining transportation statistics.

Look for Opportunities

The City should incorporate traffic and safety improvements into street resurfacing or capital improvements projects.

Research

The Committee recommends that national “best practices” for the management and reporting of transportation issues be researched to determine possible indicators or systems that could be applied in Takoma Park.

3. Intermediate – Establish Permanent Transportation Committee

Establish a Permanent Advisory Committee and Annual Forum on Safe Roadways

A permanent Transportation Safety Advisory Committee should be established by the City Council to act as a partner and oversight agent in the matters recommended above. It should be composed of representatives from each of the City’s 6 wards, a representative from the Public Safety Citizens Advisory Committee, and diverse interest groups (i.e. elderly, disabled, pedestrians, bicyclists, etc.). The activities of the committee will be to work with City staff to:

- develop a citizen involvement program;
- help gather accident and traffic statistics
- develop a multi-pronged public outreach program incorporating citizens and neighborhood associations;
- develop quality of life indicators;
- define appropriate areas of analysis that will account for impacts of proposed development outside of Takoma Park; and
- devise a process for prioritizing and implementing transportation recommendations.

One key activity of the Committee should be the convening of an annual forum to discuss transportation issues. The concerns raised at this meeting will guide the Committee’s agenda for the following year. The annual forums should include reports from:

- adjoining jurisdictions;
- the City; and
- public interest groups.

4. Mid-term Process Change

Interdepartmental Coordination

The City should designate a contact person who will refer traffic complaints to the appropriate City Department and staff member. All complaints will be recorded in a report and a staff committee comprised of representatives of each of these departments will meet periodically to review and determine which complaints may lend themselves to an interdepartmental approach. The newly implemented “Action” system is expected to facilitate this effort. A comprehensive listing of all traffic complaints and progress on their resolution will be included in the annual traffic/pedestrian safety status review to the City Council.

The City should designate one staff member for managing requests to outside agencies, or coordinate requests through a collective interdepartmental process. This will eliminate requests that duplicate or even contradict each other.

Project Ranking

City staff, working with the Committee, should establish a project ranking process to be performed at regularly defined intervals as a method to manage the prioritization of recommendations in all traffic studies (See Appendix C).

5. Long-term Process Change

Study Content

As elaborated on above, the City needs to develop a policy that defines the required data content for transportation studies. Specific objectives should be clearly defined and addressed in each study. The policy should state guidelines and requirements for automobile, bicycle, and pedestrian safety and provide minimum and desired requirements that must be included in future traffic studies, including quantitative quality of life indicators (See Appendix B).

Review and Reporting

The City should institute a process for the expeditious (e.g. complete within 30 days) review of completed studies and **explicit decision-making** on each recommendation contained therein. A timeline of major milestones related to the implementation of a recommendation should also be decided upon.

City staff should periodically (e.g. every 6 months) review, document and report to the Council the progress made on implementing recommendations made through traffic studies and for which the Council has voiced its support.

Public Forums

City staff, with support from the permanent Committee, should conduct an annual, cumulative traffic/pedestrian safety status review and public forum on all modes of transportation to City Council (i.e. "Takoma Park, Our Roads, Our Future"). This report should be open for public comment and should include:

- Changes in the level of service (LOS) provided at key intersections.
- Changes in the volume and nature of traffic (e.g. increase in dump-truck traffic) using Takoma Park streets for pass through.
- Accident, traffic and code enforcement statistics.
- Status of pending development and street improvement plans likely to have an impact on the City.
- The status of the priority projects scheduled for completion in the fiscal year.
- The status of the Council dispositions from the last status report.

The status review and forum will be an opportunity to discuss resident concerns, formulate solutions, and provide guidance for the Committee's agenda. It will provide support to the City in evaluating the completeness of all studies performed in Takoma Park that impact transportation and quality of life issues (e.g. pedestrian/bicycle safety, noise, vibration, pollution).

Multi-jurisdictional Coordination

In addition, the City should establish a permanent working group with State and County planning and transportation agencies and organizations. Using this mechanism, City staff should meet periodically (e.g. every 6 months) **jointly** with the appropriate State and County department's key personnel to review priorities, plans and to assign project responsibilities and follow-up duties.

Because much City traffic is generated outside of Takoma Park, Council should work with bordering areas like Bethesda, Silver Spring, and Washington, D.C. to ensure that Transportation Demand Management (TDM) techniques are aggressively employed.

Service Not Structure Improvements

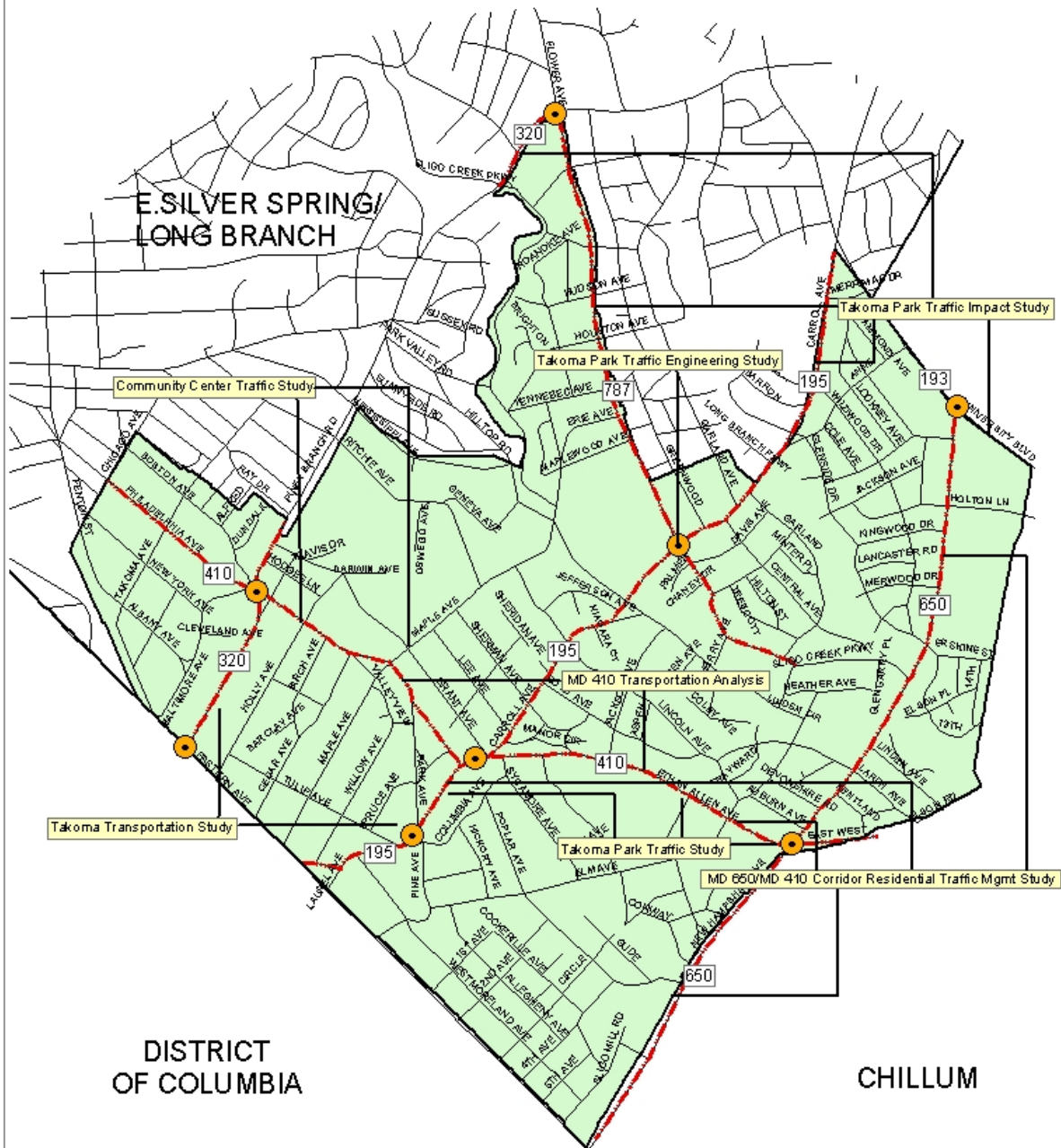
Although major new developments occur infrequently within and near Takoma Park, they have the potential to significantly and adversely affect traffic, safety, and the quality of life of Takoma Park residents. In the past, the approach in dealing with such developments has been to require a set of mitigation activities that are designed to offset anticipated increases in traffic or decreases in safety. However, there is rarely any follow-up to determine whether mitigation activities actually achieve their desired goal or even whether mitigation requirements set by the City are ever taken.

We propose that the City establish a policy for the mitigation of traffic and safety problems that requires a level of service and conditions set by the City, not by specific structural outcomes. Thus, policies should define the service endpoint of a project rather than the structural changes. If, however, the project does not achieve the required service end points, the City must take action to ensure that the endpoints are met.

7. Conclusion

In conclusion, the Committee recognizes that a considerable amount of thought, planning and resources must be committed by the City to make inroads into Takoma Park's persistent traffic problems. Without the commitment, however, we will continue to be ineffective. For this reason, the Committee hopes that the City will implement the recommendations in this report in a timely manner.

Takoma Park Traffic Studies and Roadway Maintenance



The Maryland-National Capital Park and Planning Commission
 Montgomery County Department of Park and Planning
 Countywide Planning Division | Transportation Planning Unit
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 December 2003

- City Boundary
- SHA maintained roads
- Major Intersections



1 inch equals 0.282756 miles

8. APPENDICES

Appendix A

List of Reviewed Takoma Park Traffic Studies

Below is a list of reports for the various traffic studies that have been conducted along the MD State roads within the City of Takoma Park. These files were pulled from the City's Economic and Community Development department storage area and were reviewed by the members of the Safe Roadways Committee. The list (below) identifies the name of the study, the date(s) the studies were conducted, the various State roads covered in each scope, and major elements included in each study:

1. Takoma Transportation Study (September 2002-03)
 - State roads covered in the project scope: Philadelphia Ave (MD 410), Piney Branch Rd (MD 320), Carroll Ave (MD 195)
 - Identifies major issues regarding traffic, pedestrian facilities, transit and parking
 - Includes a summary of existing conditions and recommendations for major issues identified
2. Community Center Traffic Signal and Crosswalk Study (November 2002)
 - State roads covered in the project scope: Philadelphia Ave (MD 410) + Cedar Ave, Philadelphia Ave (MD 410) + Holly Ave, Philadelphia Ave (MD 410) + Maple Ave
 - Presents data, findings and recommendations of traffic signal warrant studies
 - Identifies the existing conditions for the pedestrian facilities and the recommendations for safety improvements
3. MD 650/MD 410 Corridor Residential Traffic Mgmt Study (February 1993)
 - State roads covered in the project scope: Ethan Allen Ave (MD 410), Carroll Ave (MD 195), New Hampshire Ave (MD 650)
 - Involves an in-depth transportation analysis of the residential areas bounded by these state roads (i.e. WACO, Westmoreland, etc.)
 - Discusses traffic-related problems (i.e. speeding and congestion) and details the findings and recommendations with regards to traffic calming measures
4. Takoma Park Traffic Impact Study (September 1987)
 - State roads covered in the project scope: Ethan Allen Ave/ Philadelphia Ave (MD 410), University Blvd (MD 193), Piney Branch Rd (MD 320), Carroll Ave (MD 195), Flower Ave (MD 787)
 - Investigates potential traffic impacts of the redevelopment of the Silver Spring CBD
 - Discusses elements such as: trip generation, trip distribution, modal split, and LOS (levels of service)

5. Takoma Park Traffic Engineering Study (May 1979)

- State roads covered in the project scope: Carroll Ave (MD 195) and Flower Ave (MD 787) intersection
- Identifies existing conditions (i.e. roadway geometry, sidewalks and crosswalks, etc.) and discusses recommended improvements
- Cost estimates for recommended improvements are detailed in the report

Individual Study Reviews

Study 1: Takoma Transportation Study

District of Columbia Department of Transportation and City of Takoma Park, Maryland

Completed: May 2003 - Draft Final Report
- Final Report

Prepared by: DMJM and Harris, Inc.

Boundaries: Georgia Avenue, NW
Peabody Street, NW
Eastern Avenue between New Hampshire Avenue and Carroll Avenue
Philadelphia Avenue, Piney Branch Road and Blair Road

Purpose(s): Study existing and future transportation conditions
Determine short term and long-term management and infrastructure improvements to reduce traffic congestion
Improve traffic and pedestrian safety
Enhance transit service
Protect residential streets from traffic impacts
Improve bicycle and pedestrian transportation facilities
Assess commercial parking needs in Takoma Park

Data: Assessment of existing and future transportation conditions

- characteristics of major roadways
- traffic volumes and speeds
- origin/destination patterns
- safety (accident data)
- queuing at critical intersections
- existing levels of service
- pedestrian circulation and facilities
- parking
- public transportation
- bicycle conditions

Future 2012 study based on Takoma District Plan with addition of Municipal Parking, redevelopment of Montgomery Collect and at the Adventist Hospital

Future 2022 study based on Central District plan, which expects most development to be in the vicinity of the Takoma Metro station

Recommendations: Predominant: Improvements to transportation operations (signal timings)
 Takoma Park specific: construct a municipal parking garage on Carroll Avenue between Willow Street and Laurel Street

Practical Effects:

- Reduce commuter and cut-through traffic along local streets
- Reduce traffic congestion
- Improve non-automotive transportation (pedestrian, bicycle, and mass transit)
- Right-size parking
- Improve visual aesthetics of rights-of-way

Types of Recommendations:

Category	Action	Responsibility
Transit	Location of Taxi Stands	
Parking	Enforcement of parking regulations	
Bicycle		
Pedestrian	Improve sidewalk access ramps	
Traffic	Optimize signal timings	
Transit	Pull in/Pull out area for buses	
Transit	Location of bus stops	
Transit	Aesthetics of bus stop (trash receptacles, signage)	
Transit	Safety of bus stop (lighting)	
Parking	Impose/lessen parking restrictions (zone permit areas, time limits, no parking)	
Parking	Provide parking signs and/or meters	
Parking	Change pavement markings to delineate parking areas	
Parking	Create delivery zones	
Parking	Create angled parking	
Traffic	Provide speed tables	
Traffic	Enforce speed limits	
Bicycle	Provide bicycle racks and/or lockers	
Pedestrian	Repair and/or provide crosswalks	
Bicycle	Provide adequate signage for bicycle routes	
Pedestrian	Mark crosswalks	
Pedestrian	Build new sidewalks	
Pedestrian	Widen sidewalks	

Pedestrian	Maintain sidewalk right-of-way (trim yard growth)	
Pedestrian	Repair sidewalks	
Traffic	Install speed cameras	
Traffic	Prohibit left turns	
Traffic	Provide leading left turn lights/left turn bays	
Traffic	Install medians/islands	
Traffic	Maintain line-of-sight (trim yard growth)	
Traffic	Install reflective strips on rails	
Traffic	Install speed hump	
Pedestrian	Inspect pavement markings and re-strip where needed (use diagonal stripes)	
Pedestrian	Install pedestrian crossing signing	
Traffic	Provide longer arms/bigger signs for No Turn on red	

Study 2: Municipal Center/Future Community Center Vicinity Traffic Study

November 2002

Who:	Kimley-Horn and Associates under contract to the City of Takoma Park
Boundaries:	Maple at Grant Avenue; Philadelphia at Cedar Avenue; Old Philadelphia/Grant/Philadelphia; Holly and Philadelphia
Purpose:	Traffic Signal Warrant Study and Crosswalk Analysis in consideration of the new community center (this was a follow up to a traffic study for the addition of the community center to the municipal center)
Study Data:	Traffic and pedestrian counts taken by City personnel on June 19, 2002. The counts were used to determine if specific warrants prescribed under the Manual of Uniform Traffic Control Devices (MUTCD) were met for the intersections.
Conclusions & Recommendations:	<p>The traffic and pedestrian counts for the Holly/Philadelphia, Maple/Philadelphia, and Grant/Philadelphia intersections are not high enough to meet the warrants for traffic signals.</p> <p>The traffic and pedestrian counts for the Old Philadelphia/Cedar/Philadelphia intersection are not high enough to meet the warrants for traffic signals.</p> <p>Relocate the existing crosswalk by the library entrance to the east approximately 20 feet.</p> <p>Mark the Philadelphia Avenue crosswalks with a different pavement</p>

color and/or texture.

Close Old Philadelphia Avenue at its intersection with Philadelphia Avenue.

Extend the southern curb of Philadelphia Avenue between Cedar Road and Old Philadelphia to the north.

Questions: Conduct a traffic calming study in the area to focus on measuring vehicle speeds, and vehicle gaps, along with traffic and pedestrian counts along Philadelphia Avenue.
Gap studies should be performed for pedestrian traffic at the intersections of Philadelphia and Holly and Maple and Grant

Planned Outcomes: Recommendations for pedestrian and traffic safety and control in conjunction with the development of the new community center.

Study Status: Unknown

Study 3: New Hampshire/Ethan Allen Avenue Corridor Residential Traffic Management Study

February 1993

Author(s):

The Maryland-National Capital Park and Planning Commission
Transportation and Public Facilities Planning Division
Prince George's County Planning Department

Purpose:

Determine the cut-through traffic problems along residential streets in the study area.
Evaluate vehicle operating speeds, compliance with the Manual on Uniform Traffic Control Devices, and other corridor specific issues in the study area.

Area of study bounded by

Ethan Allen from New Hampshire to Carroll Ave, Carroll Ave to Eastern Ave, Eastern Ave to Second Ave, Second Ave to Westmoreland Ave, Westmoreland Ave to Highland Ave, Highland Ave to Poplar Ave, Poplar Ave to Elm, Elm back to New Hampshire

Recorded data includes

Average daily traffic volumes on MD 650, MD 410 (Ethan Allen), and MD 195 (Carroll)
Travel speeds along: Westmoreland, Walnut, Carroll, Elm, and Ethan Allen
Pass-through traffic: Westmoreland, Pine, Sycamore, Elm, Poplar, Sheridan, and Walnut
Turning movement volumes
Survey of existing traffic control devices

Study recommendations

Only a few recommendations were made:

- On-street parking to reduce vehicular speed
- Peak period turn prohibitions {sic}

- All-way stop signs
- Continue to monitor traffic

Reviewer's observations

- The study was conducted as a response to a WACO request of Oct. 1991
- Although copious good data was collected, there appear to be significant problems with their interpretation. They seem to come from use of the "Manual" definitions.
- The report includes some fluff.
- The report generally "pooh-poohs" the residents' concerns.

Study 4: Takoma Park Traffic Impact Study

September 4th, 1987

Author: Erdman and Associates, Inc. Consulting Engineers

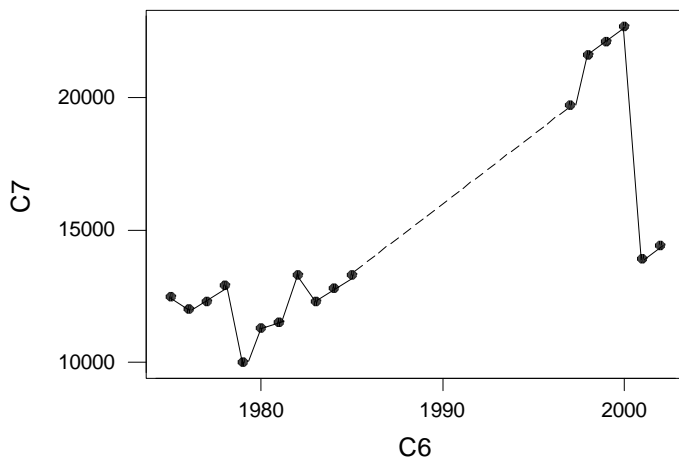
Boundaries: The report evaluated all intersections between University Boulevard, Carroll Avenue, Flower Avenue, Sligo Creek Parkway, and Philadelphia/Ethan Allen Avenue. It also examined intersections of Piney Branch Road with Carroll Avenue, University Blvd., Flower Avenue, Sligo Creek Parkway, Dale Drive, Sligo Avenue, Philadelphia Avenue, and Eastern Avenue.

Purpose of Study: In response to the proposed redevelopment of the Silver Spring Central Business District (SS CBD) the County proposed to 1) establish a transportation management district, 2) divert through traffic away from SS CBD, and 3) create incentives to reduce vehicle use and increase vehicle occupancy. This study was commissioned by the City Council of Takoma Park to evaluate the impacts of these proposals on Takoma Park, which were intended to divert traffic from SS onto Dale Road, Piney Branch Road, and Sligo Creek Parkway through Takoma Park.

Data Used/Findings: Used other studies (commissioned by the County) to calculate that of 6,000 new vehicle trips created by SS CBD redevelopment, 1,500 of which would occur on the above roads that traverse Takoma Park. For example, 700 new trips would occur during the AM rush hour through the Philadelphia Ave/Carroll Avenue intersection, and 670 new trips would pass through the University Blvd./Piney Branch Road intersection (with identical figures during PM rush hour).

Also examined twelve (12) intersections in Takoma Park using critical lane analysis. Data for five(5) of these was provided by Maryland SHA and Takoma Park commissioned counts at the remaining seven (7). In AM, level of service at intersections was: A = 3, B = 1, C = 2, D = 5, and F = 1. Predicted to go to A = 1, B = 1, C = 0, D = 3, E = 1, and F = 6 with SS CBD redevelopment and traffic diversion. Overall increase in critical lane volume predicted to be 4,693. In PM, similar results were achieved.

Also summarized average daily traffic volume provided by Maryland SHA for Ethan Allen Avenue (410) west of New Hampshire Avenue (650). The following graph summarizes the data provided with ADT on the Y-axis and year on the X-axis. I added the most recent data available from the Maryland SHA website (1997-2002) and it is interesting to note that traffic apparently declined 40 percent at this location between 2000 and 2001.



Recommendations:

None made except for the generally expressed view that Montgomery County's proposed diversions of traffic were unlikely to happen so the impact on Takoma Park was even less certain.

Questions Listed:

None

What Was Supposed to Happen:

Unclear

Status of Study:

Unknown

STUDY 5: Takoma Park Traffic Engineering Study

May 1979

Who Performed the Study?

Richard Browne Associates in Columbia, MD.

Study Boundaries

The report seems to take the incorporated area of Takoma Park as the study area. The report only collects data on selected intersections. Except for statements in the introduction, there is no analysis beyond the intersections in the study: Carroll Ave and Flower Ave, Carroll Ave and Philadelphia Ave, Carroll Ave and Ethan Allen Ave, Tulip Ave and Willow Ave, Maple Ave and Tulip Ave, Maple Ave and Sligo Creek Parkway

Stated Purpose of the Study

In the introduction, it is noted that the study was conducted for the City of Takoma Park by the State Highway Administration. The introduction also noted that the recent introduction of the

Metro stop is expected to generate increase traffic.

What Data Are Recorded?

At each intersection there are traffic counts and accident data.

What Were the Recommendations?

- It recommends that a traffic signal be installed at Carroll and Flower, with long presence loops. There is a traffic signal at the intersection.
- A "raised concrete island" installed on the northeast corner of Carroll and Flower. The island currently exists. (North is considered outbound on Flower).
- Restriping northern and western legs. There are stripes on these legs, although I do not know when the stripes were painted.

Carroll and Philadelphia - The report notes that accidents at that intersection can be corrected by a signal. There is currently a signal on that intersection.

Carroll and Ethan Allen - The report sees the main problem as excessive delay. It recommends "relocating" Ethan Allen "onto the old service station property on the eastern corner" creating a T-junction. This was not done.

Tulip and Willow - The report recommends a staged procedure resulting in removing stop signs on Tulip and placing stop signs on Willow. There are currently 4 stop signs at this intersection.

Maple and Tulip - The report says "peak hour traffic volumes do not warrant four way stop control." Although a four way stop is not warranted, the report recommends no change because of "intense public support" for the signs.

The report recommends removing parking on the west side of Maple. There is currently no parking on that side of Maple.

Maple and Sligo - The report recommends widening the bridge at Maple and Sligo!! It suggests creating 3 lanes and widening the bridge from 21 feet to 51 feet (17 meters) wide. This figure includes 5-foot (1.5 meter) sidewalks.

Questions Listed

None

What Was Supposed to Happen?

Recommendations summarized above.

Status of the Study

See notes above.

Miscellaneous

- The report includes a cost/benefit analysis based on \$6,200 injury accident, \$1,400 property damage accident, and vehicle cost of \$5 per hour.
- The report includes accident data at each intersection.
- The report makes no quantitative predictions on future traffic flow.

Takoma Park Master Plan

In addition to these studies, the *Takoma Park Master Plan* includes a number of recommendations to create “neighborhood-friendly circulation systems.” The plan envisions accommodating “local and regional traffic and recommends a system which provides for safe, pleasant, and convenient pedestrian and bicycle access” (M-NCPPC, 2000). It specifies goals and objectives to protect community character livability in established neighborhoods. Most importantly, it recommends developing a more aggressive traffic mitigation program and revising current congestion standards.

The Master plan advocates applying Transportation Demand Management (TDM) as a key strategy to reduce traffic congestion. TDM seeks “to optimize the use of an ever-constrained transportation network by implementing strategies such as ridesharing, parking supply controls (such as pricing and availability), pedestrian friendly design, transit accessibility and affordability, and other practices which reduce the demand for automobile use, particularly during peak travel periods” (M-NCPPC, 2000). The residential character of Takoma Park means that most residents commute outside of the City to their places of employment. The Silver Spring/Takoma Park Policy Area has the best transit accessibility in the County (M-NCPPC, 2000 p. 48), which provides an alternative to the automobile to those willing or able to take public transit. However, to address traffic that traverses City arterials, it is necessary to employ TDM techniques on a regional basis and should, therefore, be pursued by the multi-agency working group. The group could work to reduce the amount of pass-through traffic culminating in nearby employment centers like Washington, D.C., Silver Spring, and Bethesda.

Appendix B

Recommended Transportation Study Guidelines

The City of Takoma Park does not have guidelines for conducting traffic impact studies. This has resulted in wide variations in evaluation methods, techniques, and standards used in each study, making inter-study comparison difficult. In addition, without established objectives it is more likely that any given study may not effectively address City concerns. Therefore, the Committee recommends a “standard” for traffic study topics and minimum requirements in all future traffic studies that should include the following areas of concern:

- a) measures of traffic flow and congestion;
- b) measures of quality of life metrics; and
- c) the summary of accidents at intersections and along roadways during a relevant time period.

These measures should be developed to address the traffic-related concerns of Takoma Park residents as well as taking into account the unique characteristics of the City set forth in Section 3 of this report. The permanent Committee, with the assistance of City staff, will define required study specifications and measurements that will make them comparable over time. Furthermore, when County or State agencies conduct studies in Takoma Park, the City should make every effort to include its requirements in these studies. The interagency working group will be the appropriate forum to accomplish this objective.

Measuring of Traffic Flow and Congestion

The intent of requiring that an inclusive set of metrics for measuring traffic flow and congestion be provided is to assure that a complete picture is made available of the state of the traffic in the study area.

The Takoma Park City Specification should require a standard of measurements or projections be made. Examples include:

- Critical Lane Volume (CLV) – the sum of traffic volumes that cross at one point in an intersection; used to determine “level of service” (LOS) of an intersection.
- Level of Service (LOS) – indicate how well an intersection or section of roadway performs. There are six levels-of-service which range from A to F. LOS A indicates ideal conditions, with low traffic volumes and densities and little or no delay. LOS F indicates low speeds and congestion.
- Volume/Capacity Ratio (V/C) – A ratio used to measure congestion and the level of service of a roadway.
- Roadway Congestion Index (RCI) – A measure of congestion developed by the Texas Transportation Institute (TTI). A value greater than 1 indicates a congested network.
- Travel Rate Index (TRI) – A measure of congestion involving travel times.
- Queuing measures and analysis (waiting for light cycles)

As mentioned above, the permanent Transportation Committee, in consultation with City staff, should decide on a final list of required measurements. It is also recommended that no matter where the actual study area is, the above measurements or projections also be made at the several designated critical/key City intersections. These may be: Piney Branch and Philadelphia, Philadelphia and Maple, Carroll in Old town, the Junction, etc.

Measuring Quality of Life

Quality of life indicators have not been measured in previous traffic or development related studies. In actuality, the quantity and consistency of this type of data is limited and varies greatly by jurisdiction, if available at all. However, this should not restrain Takoma Park from requesting that this data be collected in future studies. The permanent Committee, with assistance from City staff, will make recommendations on what indicators should be included in future transportation studies.

Examples of Quality of Life Indicators

- **Safety statistics**
 - Motor vehicle caused injuries
 - Property damage
- **Pedestrian**
 - Injuries to pedestrians
 - Perceived level of safety
 - Pedestrian environment: condition of the sidewalks and crossings, foliage, lighting
- **Transit**
 - Residents' perception of transit system categories: excellent, good, fair, poor, don't know
- **Noise**
 - Perceived and measured transient and average noise levels
- **Vibration**
 - Measured
 - Damage to property
- **Pollution**
 - Perceived and measured at fixed monitoring stations and compared against a air quality standard
 - Observed health implications (cancer, respiratory, cardiovascular and pulmonary diseases, intrauterine growth retardation and prenatal/infant mortality)
- **Commute** (not necessarily applicable to Takoma Park)
 - Residents' perceived changes in commute time during the past year categories: increased, decreased, about the same, don't know
 - Reported one-way commute time among those who drive alone or carpool

Appendix C

Prototype Process for Project Ranking and Selection

The City already has numerous past study recommendations, many of which are still applicable to current transportation problems. As a method to cull and prioritize these solutions, the City should develop an objective process for ranking their importance. This technique could become the foundation upon which future physical modifications are implemented.

Below is the method that the City of Portland, Oregon (1993) uses to rank its street system for implementing arterial traffic calming procedures. It contains a number of quantifiable variables used to rank each street segment based on a point system. Those streets that have the highest number of points are the first streets to receive any transportation modifications. This technique is included primarily for reference. If implemented, the City and/or the permanent Committee must come to consensus on both the method and variables.

Speed: Speed will be based on average daily speed during nonpeak hours. Up to 30 points can be assigned (2 points for every mile over 30 mph, up to a maximum of 30 points for 45 mph and over).

Volume: Volume will be based on average daily vehicular traffic. Up to 25 points can be assigned (1.667 points per 1,000 ADT, up to a maximum of 25 points for 15,000 ADT).

Residential Density: Residential density will be determined based on zoning. All buildings with frontage on the street segment will be included. Up to 20 points can be assigned (4 points per 100 dwelling units per mile (DUPM), up to 500 DUPM).

Lack of Sidewalks: Street segments lacking sidewalks will be given 9 points. The lack of sidewalks is defined as the absence of a continuous sidewalk on both sides of the street segment.

Elementary School Crossings: 7 points will be added to a street segment if children have to cross the street to get to an elementary school.

Other Pedestrian Generators: An additional 5 points will be assigned if any of the following pedestrian generators occur within the street segment and within 1,000 feet of the street:

- Retail commercial uses
- Institutional uses
- Parks
- Schools not included in the elementary school crossing criterion (e.g., Montgomery college, middle school, etc.)

Street Width: Street segments over 40 feet wide will be given 4 points.

Criteria	Points	Basis for Point Assignment
Speed	0 to 30	Average daily speed during nonpeak hours.
Volume	0 to 25	Average daily vehicular traffic.
Density	0 to 20	Residential density along segment, based on zoning.
Sidewalks	0 or 9	Absence of continuous sidewalk on both sides of street segment.
Elem. School	0 or 7	Points assigned if children must cross segment to get to

Crossing		elementary school.
Pedestrian Generators	0 or 5	Points assigned if other pedestrian generators are along segment or within 1000 feet of the street.
Street Width	0 or 4	Points assigned for segments over 40 feet wide.
Total Points Possible	100	Ranking: Highest total points to lowest total points.

Appendix D

Council Resolution Establishing the Safe Roadways Committee

Introduced By: Councilmember Elrich

Resolution No. 2002-91

Resolution Establishing the Takoma Park Safe Roadways Committee

WHEREAS, the City of Takoma Park wishes to establish a citizens committee to study traffic issues and provide advice to Council; AND

WHEREAS, this committee shall be called the “Takoma Park Safe Roadways Committee” and shall be constituted for a one-year duration, which may be extended at the discretion of Council or, by ordinance, established as a standing committee; AND

WHEREAS, the committee shall consist of seven members, including two members of the Public Safety Citizens Advisory Committee and five members appointed by Council; AND

WHEREAS, the charge to the committee is to identify city wide traffic safety issues and possible approaches to solving those problems, undertake data collection and research, and prepare a report by December 1, 2003 to the City Council recommending the legislative or policy steps the City Council could pursue and the actions City staff could take to address the traffic safety issues in Takoma Park; AND

WHEREAS, the committee, through staff communications or committee reports to Council, shall keep the Council apprised on a regular basis of the progress of the committee through the year; AND

WHEREAS, the committee may lobby or provide comments or recommendations to entities other than the City Council only as authorized and directed by the City Manager or through formal action by the City Council; AND

WHEREAS, the City Manager shall assign City staff or contract for committee staff services with sufficient levels of expertise and available work hours to allow the committee to successfully accomplish its charge.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF TAKOMA PARK, MARYLAND THAT the City Council hereby **approves** the establishment of the Takoma Park Safe Roadways Committee.

Adopted this 25th day of November, 2002.

ATTEST:

Catherine E. Waters, CMC/AAE
City Clerk

Glossary

Bulbouts, also known as narrowings, neckdowns, and chokers, are curb extensions that reduce curb-to-curb roadway travel lane widths. The narrower road lane width enables pedestrians to cross the street in a much shorter time, decreasing the chances of pedestrian-vehicle conflicts.

Medians are raised islands located along the centerline of a roadway. They narrow the travel lane width and, if placed at a bend in the road, are useful for giving motorists advanced notice of the curvature of the roadway.

Pedestrian Refuges or Islands are raised structures placed between two travel lanes, usually at a pedestrian crosswalk. They provide a safe area for pedestrians allowing them to cross the road one half at a time. Additionally, they slow left-turn movements and vehicles at intersections due to the narrower travel lane width.

Roundabouts are circular barriers placed in the middle of an intersection that substitute for traffic signals or all-way stop signs. They are safer than conventional intersections because motorists must decrease their speed and there are fewer conflict points.

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